

**AMENDMENTS TO THE SPECIFICATION:**

*Please amend the paragraph at page 1, line 2, as follows:*

The present invention relates to a reflector with a metal selected from silver or aluminum laminated on a polymer base. More specifically, the invention relates to a reflector having a configuration of a polymer base, a high refractive index layer, a low refractive index layer, a metal layer mainly composed of silver or aluminum. Furthermore, the invention relates to a lamp reflector, a reflector under a light-guiding plate, a backlight device and a liquid crystal display using the reflector.

*Please amend the paragraph at page 3, line 18, as follows:*

(I) the ~~ratio~~ content (Rn) of atoms of the same ~~atoms~~ elements as ~~atoms~~ elements (A2) (excluding metals) in ~~atoms~~ elements (A1) (excluding metals) relative to the ~~atoms~~ elements (A1) is not less than 98.0 atomic %, wherein the ~~atoms~~ elements (A1) are observed by the XPS measurement of portion at depths of 0 nm to 10 nm from a side of the reflective layer of the polymer base (D) and the ~~atoms~~ elements (A2) are observed by the XPS measurement of portion at depths of 50 nm to 10  $\mu$ m from a side of the reflective layer of the polymer base (D). According to the present invention, a reflector having a very high reflectance can be obtained.

*Please amend the paragraph at page 4, line 1, as follows:*

Furthermore, the present invention relates to a lamp reflector using the aforementioned reflector. According to the present invention, a lamp reflector having a very high reflectance can be obtained so that it is possible to realize a display device with a high luminance, an energy-saving display device or the like.

*Please amend the paragraph at page 4, line 23, as follows:*

(II) the ~~ratio~~ content ( $R_{n1}$ ) of atoms of the same ~~atoms~~ elements as ~~atoms~~ elements (A21) (excluding metals) in ~~atoms~~ elements (A11) (excluding metals) relative to the ~~atoms~~ elements (A11) is not less than 98.0 atomic %, wherein the ~~atoms~~ elements (A11) are observed by the XPS measurement of the surface forming a reflective layer of the polymer base (D1) and the ~~atoms~~ elements (A21) are observed by the XPS measurement of portion at depths of 50 nm to 10  $\mu$ m from a side of the reflective layer of the appropriate surface of the polymer base (D1).

*Please amend the paragraph at page 10, line 9, as follows:*

A film thickness of the low refractive index layer (B) cannot be uniformly defined because it is different depending on the wavelength area enhancing the reflectance or the refractive index of a substance forming the low refractive index layer. However, in the present invention, it is preferably not less than 20 nm and not more than 200 nm, and more preferably not more than 150 nm. In general, the thickness of the low refractive index layer is preferably  $\lambda/4n_L$  for exhibiting a reflection-increasing effect when a wavelength of a light to be set is defined as  $\lambda$  and a refractive index is defined as  $n_L$ . However, in the present invention, it is preferably about  $\lambda/8n_L$  in some cases. Accordingly, in order to enhance the total light reflectance at a wavelength of 550 nm, the film thickness is more preferably not less than 25 nm and not more than 120 nm, and further preferably not less than 25 nm and not more than 115 nm. On the other hand, a high reflectance may be needed for a light at a wavelength of 450 nm or 650 nm in some cases. In order to enhance

the total light reflectance at a wavelength of 450 nm, the film thickness is more preferably not less than 20 nm and not more than 110 nm, and further preferably not less than 20 nm and not more than 95 nm. Furthermore, in order to enhance the total light reflectance at a wavelength of 650 nm, the film thickness is preferably not less than ~~[[35]]~~ 30 nm and not more than 200 nm, more preferably not less than 30 nm and not more than 150 nm, further preferably not less than 30 nm and not more than 145 nm, and the most preferably not less than 30 nm and not more than 140 nm. Incidentally, a light at the aforementioned wavelengths of 550 nm and 450 nm is greatly related to visibility so that it is a highly important light.

*Please amend the paragraph at page 12, line 24, as follows:*

The thickness of the polymer base in the present invention is not particularly restricted. When a polymer film is used as the polymer base, the thickness thereof is preferably from 10 to 250  $\mu\text{m}$ , more preferably from 10 to 200  $\mu\text{m}$ , and further preferably from 20 to 200  $\mu\text{m}$ . When the polymer base is used for a lamp reflector to be described below, the thickness thereof is particularly preferably from 10 to 150  $\mu\text{m}$ . When rigidity, light-weightness of the reflector and the like are needed, a polymer base either in a sheet shape or a plate shape is used. The thickness thereof may exceed 250  $\mu\text{m}$  and those having a thickness of, for example, a commercial glass plate and the like can also be used.

*Please amend the paragraph at page 14, line 7, as follows:*

(II) the ratio content ( $R_{n1}$ ) of atoms of the same ~~atoms~~ elements as ~~atoms~~ elements ( $A_{21}$ ) (excluding metals) in ~~atoms~~ elements ( $A_{11}$ ) (excluding metals)

relative to the ~~atoms~~ elements (A11) is not less than 98.0 atomic %, wherein the ~~atoms~~ elements (A11) are observed by the XPS measurement of the surface forming a reflective layer of the polymer base (D1) and the ~~atoms~~ elements (A21) are observed by the XPS measurement of portion at depths of 50 nm to 10  $\mu$ m from a side of the reflective layer of the appropriate surface of the polymer base (D1).

*Please amend the paragraph at page 14, line 13, as follows:*

Here, when the ~~atoms~~ elements (A21) comprise two or more kinds of ~~atoms~~ elements, for example, C (carbon) and O (oxygen), the  $Rn_1$  value is represented by the sum of the contents of atoms of such ~~atoms~~ elements included in the ~~atoms~~ elements (A11), i.e., the sum of the contents of carbon and oxygen atoms, while there is no need to compare respective elements in the ~~atoms~~ elements (A11) and the ~~atoms~~ elements (A21). For example, when the ~~atoms~~ elements (A21) comprise carbon and oxygen, even if the contents of carbon atoms in the ~~atoms~~ elements (A11) and the ~~atoms~~ elements (A21) are different, and the contents of oxygen atoms are different, the  $Rn_1$  value may satisfy the above requirement.

*Please amend the paragraph at page 14, line 21, as follows:*

Here, the ~~atoms~~ elements (A21) (excluding metals) to be observed by the XPS measurement of portions at depths of 50 nm to 10  $\mu$ m from a side of the reflective layer of the appropriate surface of the polymer base (D1) are considered corresponding to major elements which form the polymer base (D1). For example, polyethylene terephthalate (PET) indicates carbon and oxygen. Although PET contains hydrogen as well, hydrogen as described before cannot be detected by

XPS. So, in the present invention, when the polymer base is made of a PET film, the ~~atoms~~ elements (A21) indicate carbon and oxygen, excluding hydrogen.

Furthermore, when a very high sensitive XPS is used, an element derived from an additive such as the stabilizer as described above is possibly observed as well, whereas in a generally used XPS device, an element derived from an additive or the like is observed in rare cases. In the present invention, the ~~atoms~~ elements (A21) are considered belonging to major elements which form the polymer base (D1).

*Please amend the paragraph at page 15, line 7, as follows:*

Since the XPS measurement makes it possible for measurement in a depth direction by using etching together, such a method is considered to be used for the measurement of the ~~atoms~~ elements (21) as well. However, in case of an organic polymer to be preferably used as the polymer base (D1), a polymer structure might be possibly damaged during etching. Accordingly, in order to measure portions at depths of 50 nm to 10  $\mu$ m from a surface in a side of the reflective layer of the polymer base (D1) by XPS, the appropriate polymer base surface is cut at a thickness of 50 nm to 10  $\mu$ m by a diamond cutter or the like. By measuring the thus-cut surface by XPS, the ~~atoms~~ elements (A21) at the aforementioned depth are preferably determined. At this time, the composition of the ~~atoms~~ elements (A21) is determined by an average value of 3 arbitrary points measured at the aforementioned surface. The depth from a surface in a side of the reflective layer is determined in consideration of the quality of the polymer base material or thickness, or a thickness of an outermost layer thereof when the polymer base has a multi-

layered structure. Incidentally, the lower limit of the aforementioned depth is more preferably 100 nm and further preferably 200 nm.

*Please amend the paragraph at page 17, line 25, as follows:*

When  $Rn_1$  of the polymer base (D1) according to the present invention is not less than 98.0 atomic %, a reflector having a very high reflectance is obtained.  $Rn_1$  is more preferably not less than 98.5 atomic %, and further preferably not less than 99.0 atomic %. For example, when a PET film is used as a polymer base, and the total ratio content of carbon and oxygen atoms is not less than 98.0 atomic % of the total elements detected by the XPS measurement of its surface, it can be used for the production of the reflector of the present invention.

*Please amend the paragraph at page 21, line 18, as follows:*

(I) the ratio content ( $Rn$ ) of atoms of the same atoms elements as atoms elements (A2) (excluding metals) in atoms elements (A1) (excluding metals) relative to the atoms elements (A1) is not less than 98.0 atomic %, wherein the atoms elements (A1) are observed by the XPS measurement of portion at depths of 0 nm to 10 nm from a side of the reflective layer of the polymer base (D) and the atoms elements (A2) are observed by the XPS measurement of portion at depths of 50 nm to 10  $\mu$ m from a side of the reflective layer of the polymer base (D).

*Please amend the paragraph at page 22, line 3, as follows:*

In order to specify portions at depths of 0 to 10 nm from a side of the reflective layer of the polymer base (D) or the thickness of the high refractive index layer (A), the low refractive index layer (B) and the metal layer (C), it is necessary to define each interface. The definition of these layers is explained when the polymer base (D) and the metal layer (C) forms this interface. In the present invention, when the content of carbon ~~element~~ atoms of the polymer base (D) is defined as  $\beta$  atomic %, and the content of atoms of the metal element of a substance forming the metal layer (C) is defined as  $\alpha$  atomic %, a surface where the value of  $(\alpha/(\alpha+\beta))$  becomes 0.5 is taken for an interface. The contents of the above ~~elements~~ atoms can be determined by a known analysis method such as the aforementioned XPS or the like.

*Please amend the paragraph at page 22, line 14, as follows:*

Other interfaces can be determined in the same manner. Namely, an interface can be determined by the contents of atoms of elements such as a metal or the like determining each layer being defined respectively as  $\alpha$  and  $\beta$ . For example, an interface between a silver layer (an example of the metal layer (C)) and a silicon oxide layer (an example of the low refractive index layer (B)) can be determined by measuring the contents of silver and silicon atoms. An interface between the silicon oxide layer and a titanium oxide layer (an example of the high refractive index layer (A)) can be determined by measuring the contents of silicon and titanium atoms.

*Please amend the paragraph at page 22, line 22, as follows:*

Furthermore, measurement of the aforementioned ~~atoms~~ elements (A1) can be determined by the XPS measurement while etching the layer (A), the layer (B), and the layer (C). On the other hand, the ~~atoms~~ elements (A2) are measured in the same manner as described above. A surface of the reflector is cut at a thickness of from 50 nm to 10  $\mu$ m from an interface with the reflective layer and, then, the thus-cut surface is measured. Such a method is preferably adopted. The reason is also to avoid an effect of damage due to etching of the polymer base (D). The ~~atoms~~ elements (A1) value and the ~~atoms~~ elements (A2) value are determined by their respective averages of three arbitrary points measured on their respective appropriate surface portions.

*Please amend the paragraph heading at page 23, line 19, as follows:*

(Application to a Lamp Reflector)

*Please amend the paragraph at page 27, line 5, as follows:*

The reflector or the lamp reflector according to the present invention can be used for a sidelight type backlight device. An embodiment of the sidelight type backlight device of the present invention is illustrated in Fig. 9. That is, a lamp reflector 80 is arranged such that a light source 90 placed near a light-guiding plate 100 is wrapped.